AVIAN PROTECTION PLAN

SOLAR 33 PROJECT

SAN BERNARDINO COUNTY, CALIFORNIA

(Township 9 North, Range 1 East, Section 25)
(APN 0416-041-52)

Prepared for:

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RCA ASSOCIATES, INC

Project: #2018-73

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TITLE PAGE

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Report Title:	**Avian Protection Plan**
Assessor's Parcel Number:	**0416-041-52**
Project #:	**2018-73**
Prepared for:	**Ralph Laks** **4949 Topanga Canyon Blvd** **Woodland Hills, California 91364**
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EXECUTIVE SUMMARY

The applicant proposes to develop a 4.8 MW solar facility on a parcel that is approximately 35-acres (net 33-acres) situated north of Highway Interstate 40 and is bisected by RT 66 (National Trails Highway) in the County of San Bernardino (Township 9 North, Range 1 East, Section 25, USGS Minneola, California Quadrangle, 2015). The project APN is 0416-041-52. Of the 35-acres, the project will be developed on three pads totaling approximately 25-acres. The site is relatively undisturbed and supports a creosote community dominated by creosote bush *(Larrea tridentate)*, saltbush (*Atriplex spinifera*), white bursage (*Ambrosia dumosa*), rubberbrush (*Ericameria nauseosa*), Nevada jointfir (*Ephedra nevadensis*), tamarisk (*Tamarix ramosissima*), and brome grasses (*Bromus sp.*).

The voluntary implementation of this avian protection plan (APP) will contribute to the reduction of avian injury and mortality associated with the Solar 33 project. The property is located within the known distribution of many resident bird species; therefore, an impact analysis was conducted to assess the potential impacts that may be associated with the proposed solar project. The analysis was conducted for both resident birds, as well as migratory species which may travel through the area during Spring and Fall migration periods. The analysis was conducted by Blake Curran and Randall Arnold; together these biologists have a combined 35-years' experience in analyzing impacts on wildlife populations. The result of the impact analysis for the Solar 33 Project is summarized below.

1.0 INTRODUCTION

1.1 Property and Project Description

The applicant proposes to develop a solar facility on a parcel that is approximately 35 acres (net 33 acres) situated North of Highway Interstate 40 and is bisected by RT 66 (National Trails Highway) in the County of San Bernardino (Township 9 North, Range 1 East Section 25, USGS Minneola, California Quadrangle 2015). The project APN is: 0416-041-52. Of the 35 acres, the project will be developed with solar panels on three pads totaling about 25 acres. The Project site does not appear to have been disturbed in the recent past with native vegetation dominating the landscape. The site is bordered on the east and west by vacant lands, north of the site lies a major street and Interstate 40 is south of the site.

The site currently supports an undisturbed creosote bush (*Larrea tridentata*) community typical of this portion of the Mojave Desert. In addition to creosote bush *(Larrea tridentate)*, saltbush (*Atriplex spinifera*), white bursage (*Ambrosia dumosa*), rubberbrush (*Ericameria nauseosa*), Nevada jointfir (*Ephedra nevadensis*), tamarisk (*Tamarix aphylla*), and brome grasses (*Bromus sp.*) were also relatively common throughout the property. The vegetation community occurring on the site is common throughout this portion of the Mojave Desert and is utilized by a variety of bird species typically associated with desert habitats. Resident birds observed on the site during field investigations and those migratory species which may occur in the area as visitors are provided in Table 2 and are discussed in Section 2.0.

1.2 Purpose and Goal of Avian Protection Plan

There are two basic types of solar energy facilities: photovoltaic (PV) and concentrating solar power (CSP). Numerous solar facilities are currently being built throughout the country, especially in the southwest and these energy facilities pose potential impacts to wildlife and their habitats. Most recently, attention has been directed at the risks solar facilities pose for birds; therefore, RCA Associates was retained by the project proponent to analyze potential impacts to birds which may be associated with the Solar 33 Project. This report will address the following:

1. Provide a brief summary of avian fatalities associated with solar projects;

2. Evaluate avian species which may be affected during the construction and operation of the Solar 33 facility and;
3. Address mitigation measures which may be implemented to minimize impacts to birds.

Several federal and state regulations apply to the protection of birds at solar energy facilities with most birds protected by the Migratory Bird Treaty Act (MBTA). The MBTA prohibits the taking, killing, possession, transportation, and importation of any migratory bird, or their eggs, parts, and nests, except as authorized by U.S. Fish and Wildlife Service (USFWS). Therefore, all projects including solar facilities, are required to comply with state and federal regulations to protect all migratory species, as well as any listed (i.e., threatened and endangered) species. Because the potential impacts to bird species depend largely on several factors such as location, size, and habitats present on the site and in surrounding areas, solar projects must be analyzed on a project-specific basis in order to fully address impacts to bird species.

Like most commercial and industrial developments, solar energy facilities have the potential to impact birds either directly or indirectly, including habitat loss and/or direct fatality during the construction, operation, and decommissioning phases of the facility. There are two types of direct impacts to birds including collision related and solar-flux-related. Solar flux impacts are associated with solar facilities that employ concentrated-solar-power towers and are not applicable to the Solar 33 Project. The Solar 33 Project will utilize photovoltaic panels to generate solar energy. Information presented in this report is based on biological surveys conducted on the property by RCA Associates Inc during the baseline biological investigations and from a review and analysis of existing data sources.

The USFWS (2008) also outlines three key screening criteria for determining whether an APP should be developed for projects in California such as the Solar 33 Project.

1. Are there birds listed as federally or state threatened or endangered, federal birds of conservation concern (USFWS 2008), state species of special concern, or state fully protected species that use the project footprint for nesting, wintering, foraging, staging, roosting, breeding, or migrating?

2. Do any eagles nest within the project footprint or within 10 mi (16 km) of the nearest project boundary?
3. Is the project footprint (including transmission corridors) located within/or adjacent to a designated Important Bird Area (see http://www.audubon.org/bird/IBA/) or within a major bird site (e.g., Western Hemisphere Shorebird Reserve Network [WHSRN], or Ramsar Convention site)?

The USFWS recommends that an affirmative answer to any of these three questions stimulate the development of an APP. The project site meets criteria 1 and 2; the project site provides foraging habitat for a variety of species, including state species of special concern and state fully protected species. Secondly, there are three (3) golden eagle sightings located within 10 miles of the project footprint according to the CNDDB (2018).

2.0 THREAT ASSESSMENT

Many of the solar facilities currently under construction in the southwest have relatively large spatial footprints in order to capture as much solar radiation as possible for generation of large megawatts of clean energy. As such, the larger solar facilities can have a significant impact on bird populations in a variety of ways during all phases of the project (construction, operation, and decommissioning) (CH2M-Hill, 2009; Kagan, 2014). The range of potential impacts from solar facilities have been evaluated and like all commercial and industrial developments have the potential to, directly and indirectly, impact birds and bird communities in several ways (Lovich and Ennen, 2011). Summarized below are the various avian impacts associated with solar facilities.

Table 2.0-1: Potential Impacts of Solar Facilities on Birds

DIRECT IMPACTS	INDIRECT IMPACTS
Fatality of individual birds due to collisions with on-site structures and panels and vehicles.	Construction noise resulting in adverse behavioral changes (e.g., nest abandonment).
Destruction of onsite habitat	Road effects on daily bird behavior.
Habitat fragmentation and disruption of bird populations.	Effects of altered fire regimes on bird populations.
	Effects of altered surface water and ground water on habitat conditions.
	Effects of light pollution resulting in adverse impacts on bird populations
	Effects of spills and pollution.
	Effects of electromagnetic fields

Source: Lovich and Ennem (2011); BLM and DOE (2012)

In regards to direct impacts, the fatality of individual birds is typically associated with collision-related incidents, and this type of fatality has been documented at all types of solar facilities including photovoltaic (PV) and concentrating solar power (CSP). There are three primary

project-specific factors associated with avian impacts and include the location of the facility, size of the facility, and type of solar technology.

Facilities that are located in major migration flyways, near large wetlands or near riparian habitats along streams and rivers tend to have a greater impact on avian populations due to the larger number of birds typically found in association with these areas. The size of solar projects is also critically important to the level of impacts which may occur and the number of bird species that may be impacted. Solar facilities with very large footprints typically have a greater impact on birds than smaller solar projects (Kagan et al, 2014). In addition, different solar technologies may vary in the types and magnitude of impacts on birds (i.e., PV versus CSP). Studies have also shown that some solar facilities, especially PV projects, may attract birds which can result in a greater potential for fatalities (Lovich and Ennen, 2011). One such factor applicable to PV solar facilities has been labeled the "lake effect" due to the fact that solar panels appear to be water bodies from a distance thereby attracting various birds. Migrating waterfowl and shorebirds perceive the reflective surfaces of PV panels as bodies of water and collide with the panels when they attempt to land (Kagan et al., 2014). In addition, the glare and polarized light emitted by solar projects may attract large numbers of insects which in turn attract foraging birds resulting in collisions with project structures and solar panels.

Collisions

Most of the infrastructure elements of the proposed project including the overhead power lines, substation equipment, PV panels, fences, and buildings also represent potential collision risks for birds that utilize the project site. Overhead power lines are a well-documented collision risk for certain kinds of birds, especially larger species and fast, strong fliers with high wing loading, as well as "poor" flyers or those with limited visual acuity, including vultures, large raptors, long-legged waders and cranes, tetraonids, and waterfowl (Anderson 1978; Bevanger 1994; Brown and Drewien 1995; Manville 2005; Drewitt and Langston 2008; Martin and Shaw 2010). Where the risk of collision is great because overhead lines cross popular flight corridors for susceptible species (e.g., wetland areas where waterfowl are at risk), Avain Power Line Interaction Committee

(APLIC) advocates installation of bird flight diverters along smaller-gauge lines and wires to reduce the risk of collision (APLIC 1994; APLIC and USFWS (2005)

Increased vehicle activity around the project site during the construction and operational phases of the project is another potential source of mortality for various bird species. A variety of species are susceptible to vehicle collisions, including many smaller species that either nest along roadways or collect grit for their crops along graveled roadways: burrowing owls that often nest in burrows dug into road berms, shrikes that often hunt from fences and utility lines located along roadways, and other raptors that hunt along roadways because prey are more accessible in the shorter-cropped vegetation that often lies along or within the roadbed (on dirt roads). Strict adherence to low-speed limits and use of established roads will help minimize this threat.

Certain types of fences also pose collision risks for hunting raptors, tetraonid and gallinaceous species, cranes, and other low-flying species. Barbed wire fences are particularly notorious for snagging a variety of species, including waterfowl, cranes, herons, raptors, and sometimes songbirds (Fitzner, 1975; Allen and Ramirez, 1990; Wolfe, 1993; McNicholl, 2007; Preston, 2007). In addition, welded-wire-mesh and other multi-strand-wire fences often create a collision risk for tetraonid and gallinaceous species (Baines and Summers, 1997; Wolfe et. al., 2007), and chain-link fences occasionally snag smaller birds such as sparrows (Preston, 2007).

The risk of collision with power lines on the project site is expected to be low for most avian species and would largely be limited to resident (permanent or seasonal) birds, especially raptors. Nevertheless, to minimize the risk of collision, bird flight diverters should be installed on all of the uppermost "static" lines and the Gen-Tie Line (APLIC, 1994; APLIC and USFWS, 2005). The static lines comprise the lightning rods that protect the system from electrical storms and typically are a narrower gauge and therefore less visible than the energized lines. Fitting flight diverters to these uppermost sections of the overhead line collections would, therefore, increase the overall visibility of, and reduce the risk of collision to, the line systems.

Electrocution

The electrical infrastructure of the proposed project, including power poles and exposed substation and switching-station equipment, could pose an electrocution risk for a variety of birds especially raptors, vultures, ravens, and perhaps a few other types of larger birds that may occasionally stop to rest on power pole cross-arms. These risks will be minimized, however, by ensuring that electrical infrastructure on the project site is built following APLIC (2006) standards for avian-safe construction. Power poles and other infrastructure elements that provide substrates for ravens and raptors to nest upon and use as hunting perches may contribute to additional risks. Common ravens and buteos such as red-tailed and Swainson's hawks often build nests on power poles, and many other raptor species such as golden eagles and ferruginous hawks routinely use power poles as hunting perches. In addition, smaller species such as American kestrels frequently hunt from the power lines themselves. Without avian-safe design standards, hunting from powerlines increase the risk of electrocution for the nesting and hunting species. Given the presence of additional powerlines, prey species may be subject to higher predation if ravens and raptors utilize the powerline poles for nesting. If there is an increase in predation, various devices that discourage raptor perching may help mitigate the problem (Slater and Smith, 2010).

3.0 AVIAN PROTECTION PLAN IMPLEMENTATION

3.1 Solar 33 Energy Policy

Solar 33 would voluntarily adopt and implement the avian protection measures as described in this APP to reduce the potential for mortality that could result from electrocution, collision, or from burning from concentrated heat.

3.2 Pre-Construction and Design Features Assessment

Risk of electrocution for birds, especially raptors and other larger birds such as ravens, that may perch or nest on power poles and other electrical infrastructure installed on the project site will be effectively minimized by ensuring that all power poles, lines, and substation components are built to avian-safe standards in accordance with APLIC guidelines.

To try to minimize impacts to migratory birds during the initial ground disturbance and construction activities should occur outside of the avian breeding season (February through August) to avoid disturbing nesting birds as required by the MBTA and CDFW code requirements for most avian species. If initial ground disturbance takes place during the avian breeding season a qualified biologist shall conduct a pre-construction nesting bird survey prior to any project site disturbance during the recognized breeding season. If breeding birds with active nests are found prior to or during construction, a biological monitor will establish a 300-foot buffer around the nest for ground-based construction activities, and no activities will be allowed within the buffer until the young have fledged from the nest or the nest fails. If nesting bald or golden eagles are identified, a 0.5-mile no-activity buffer will be implemented.

3.3 Training

In order to effectively implement the APP, Solar 33 should ensure that all appropriate utility personnel should be properly trained in avian issues outlined in the APP. This training will ensure that the personnel have a thorough understanding of the APP and their responsibility to comply with the regulatory compliance and avian protection.

3.4 Permit Compliance

Solar 33 may need to obtain federal and state permits regarding avian species as it relates to mortality and to avian nest removal and relocation. These could include incidental take permits, collection or salvage permits, temporary possession, and nest removal and relocation permits. Solar 33 would work with federal and state resource agencies to determine which permits are necessary and to acquire relevant permit application, if necessary. Solar 33 will not perform any of the activities mentioned above without first obtaining the proper permit or authorization to do so if required.

3.5 Nest Management

The discovery of a nest that does not compromise facility operations or personnel safety will be allowed to remain undisturbed until an approved biologist confirms that all young have fledged or the nest has failed. Specific measures for minimizing disturbance of such nests (e.g., no-disturbance spatial buffers) will necessarily depend on the nest location and proximity to essential facility operations and activities. Such measures will be developed in consultation with an approved biologist. Otherwise, procedures for removing problematic active nests during the breeding season or inactive nests outside of the breeding season will be designed and implemented in consultation with the USFWS/CDFW, and in accordance with standard practices outlined in APLIC, 2006.

3.6 Avian Reporting System

An avian reporting system is the process of recording and cataloging all avian incidents and nest sites within the project site.

Detection

The detection of avian fatalities occurs through the investigation of avian-caused power outages and incidental observations. The detection of nest sites occurs through incidental observations and through monitoring efforts.

Investigation

Once an avian mortality or injury has been detected, personnel will record the incident using the field form (Appendix A)

In the event of a power outage, a site assessment must be performed in order to determine the cause and circumstance resulting in the outage. If the cause is bird related, the assessment will include a determination of the bird species, the type of injury, the specific cause of the fatality if possible, and other relevant data. To enhance the probability of incidental detections, all field staff will be directed to be alert for dead or injured birds in the vicinity of all project site facilities. Photographs of the bird carcass should be taken to accompany the reporting form. Information on all bird nests should also be recorded and a determination should be made regarding the potential risk posed by the presence of the nest to system function and hazard to the nesting birds.

Reporting

Solar 33 should voluntarily submit annual reports to the USFWS, CDFW, and/or the County summarizing the results of all construction-phase and post-construction avian activity, fatality, and monitoring conducted in compliance with this APP. Solar 33 should also complete the USFWS online "Bird Fatality/Injury Report", an online database of voluntarily submitted incident of avian mortalities and injuries resulting from electrocutions or collisions with utility structures. This information is used to gain information that can be used to prevent future avian impacts. If the mortality of a golden or bald eagle were to occur on-site it shall be immediately reported to the USFWS, CDFW, and BLM.

3.7 Avian Enhancement Options

Solar 33 is dedicated to promoting natural resources protection and actions that benefit local and regional bird and wildlife populations. Solar 33 would limit the project disturbance to the area within the project site to maintain the local vegetation outside thus maintain foraging and nesting habitats for avian species. Artificial perches can be installed on existing poles to enhance avian protection.

3.8 Key Resources

Solar 33 will consult with the following key resources to assist in providing advice in permitting, avian safely design, and other requirements.

- California Department of Fish and Wildlife
- U.S. Fish and Wildlife Service
- The Bureau of Land Management
- Avian Power Line Interaction Committee
- County of San Bernardino
- Edison Electric Institute

4.0 RESULTS

Comprehensive biological field investigations were conducted in June and July, 2018 by biologists from RCA Associates, Inc during which only eleven different bird species were observed on the site and/or in the surrounding area. The low number of avian species may be a function of the absence of any habitats such as wetlands and riparian areas on the site and in the surrounding area. Wetlands, lakes, and riparian areas typically attract numerous birds and provide more diverse habitats. Although the project site is located within the Pacific Flyway, most species migrating through the area tend to travel nearer the coast where more forage and diverse habitats may be available. Consequently, few migratory species are expected to occur in the area surrounding the Solar 33 Project during the Spring and Fall migration periods.

Studies conducted for large-scale solar projects have shown that passerine species are the most common species on these projects with doves and pigeons the second most common groups of birds (Walston, 2015). Water-dependent species such as waterfowl and shorebirds have been considered the most vulnerable to fatality at PV facilities because of the potential for the birds to confuse the solar panels for bodies of water (i.e., the lake effect). However, studies conducted by Kagan (2014) were inconsistent regarding the "lake effect" since water-dependent species represented only 11.2% of all avian fatalities documented at the larger solar facilities. Activities and abundance of water-dependent species (i.e., waterfowl and shorebirds) near solar facilities may be more dependent upon regional factors such as surrounding landscape.

Collision-related fatalities have been observed at all solar facilities (PV and CSP); however, avian fatalities at solar facilities may be greater for large-scale CSP solar projects due to the high level of concentrated thermal energy from the towers (Kagan, et. al, 2014). Avian deaths at solar facilities also occur due to collisions with solar structures. However, most collisions at PV projects is probably due in part to the "lake effect" (Kagan et. al, 2014). Collisions at PV projects is greatest among the solar panels, especially at large scale solar facilities (Kagan, et al, 2014). Based on a review of available information, the greatest avian mortalities occur at the larger solar facilities given the larger footprints. In many cases, the large-scale solar projects cover several hundred to several thousand acres of land with thousands of solar array panels, buildings, power poles, towers, etc. present on the site which provides numerous places for potential collisions. In regards to

smaller projects such as the Solar 33, there are significantly fewer structures present on the site and fewer solar panels. Although the Solar 33 Project will utilize several hundred PV panels, fatalities among the bird species which occur in the area as residents are expected to be minimal. In addition, few waterfowl and shorebirds are likely to occur in the area during Spring and Fall migration periods since most migrating species typically travel close to the coast where food and a variety of habitats are available. Therefore, it is the professional opinion of RCA Associates, Inc that the project, as proposed, will have minimal impacts on resident birds, as well as migratory bird species during all phases of the project (construction, operation, and decommissioning).

5.0 RECOMMENDATIONS

No additional investigations are recommended at this time. As discussed above, the proposed project has a relatively small footprint and is not expected to cause a significant increase in bird fatalities during the construction, operational, or decommission phases of the project. The number of birds which may die due to collision with the PV panels or other structures is expected to be minimal; therefore, no mitigation measures are recommended at the present time. However, in the event there appears to be a significant number of birds that are dying as a result of collisions with poles or with the PV panels due to the "lake effect", CDFW and USFWS should be contacted to discuss implementation of various mitigation measures to minimize the collisions (e.g., acoustic deterrents, visual deterrents, etc.).

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CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits, presents the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief. Fieldwork conducted for this assessment was performed by Randall Arnold and other biologists under his direction. I certify that I have not signed a non-disclosure or consultant confidentiality agreement with the project applicant or applicant's representative and that I have no financial interest in the project.

Date: August 7, 2018 Signed: Blake Curran

Blake Curran

Field Work Performed By: Randall Arnold
Principal Biologist

Field Work Performed By: Parker Smith
Biological Field Technician

Field Work Performed By: Blake Curran
Environmental Scientist/Biologist

Appendix A

Avian Forms

Avian Incident Report

Date Found: _____ **Name of Staff:** _____

Location Line (Circuit)

Name: _____ Segment: _____ Voltage: _____ Pole/Tower ID: _____

Pole Type and Configuration: _____

Electrical Parts (circle):

Transformers Capacitor Cutouts Arresters Jumper wires

Other: _____

General Land Use (circle one):

Farmland Rangeland Rural Residential Urban Urban/Rural Interface

Location of Bird Relative to Pole/Line/Array

Beneath Pole: ____ Beneath mid-span of Line: ____ Distance in feet from pole/line/array: _____

Species or Bird Group (note species if known, otherwise circle the most representative category) Species (if known): _____

Hawk	Owl	Goose	Heron/Egret	Magpie
Eagle	Raptor	Waterfowl	Waterbird	Passerine
Falcon	Duck	Crane	Crow/Raven	Unidentifiable

General Condition of Bird (circle one)

Fresh Partially Decomposed Mostly Decomposed Bones and Feathers only

Injuries (circle one)

Burn marks Dismembered Holes Trauma None Visible

Describe: _____

Likely Cause of Death (circle one)

Electrocution Wire Collision Vehicle Collision Shot Undetermined

Comments: _____

Bird Nesting Record

Date:_____ **Name of Staff:**_____

Location
Line (Circuit) Name:_____ Segment:_____ Voltage:_____ Pole/Tower ID:_____
Crossroads or other specific location information:_____

_____

General Land Use (circle one)

Farmland Rangeland Rural Residential Urban Urban/Rural Interface

Description of location of nest on tower or pole/other:_____

_____

Species or Bird Group (note species if known, otherwise circle the most representative category) Species (if known): _____

Hawk	Owl	Goose	Heron/Egret	Magpie
Eagle	Raptor	Waterfowl	Waterbird	Passerine
Falcon	Duck	Crane	Crow/Raven	Unidentifiable

Condition of Nest (circle one)

Currently in use Intact Partially Deteriorating Mostly Deteriorating
Comments: _____

Eggs or Nestlings Observed:_____

Description of Nesting History at this Location:_____

_____

_____

Risk to Birds/System and Recommended Actions (circle one)

No risk Not Imminent Risk Imminent Risk Emergency

Comments:_____

_____

Table 1 - Plants observed on the site and known to occur in the immediate surrounding area.

Common Name	Scientific Name	Location
Red tamarisk	*Tamarix ramosissima*	On site and Surrounding Area
Annual Bursage	*Ambrosia acanthicarpa*	"
Athel tamarisk	*Tamarix aphylla*	"
Mojave Yucca	*Yucca schidigera*	"
Flat Topped Buckwheat	*Eriogonum deflexum*	"
Pencil Cholla	*Cylindropuntia leptocaulis*	"
Cholla	*Cylindropuntia echinocarpa*	"
Desert Trumpet	*Eriogonum inflatum*	"
Cottontop Cactus	*Echinocactus polycephalus*	"
Brome grass	*Bromus sp.*	"
Mustard	*Descurainia pinnata*	"
Schismus	*Schismus barbatus*	"
Rabbitbrush	*Chrysothamnus nauseosus*	"
Paperbag plant	*Salazaria mexicana*	"
Ephedra	*Ephedra nevadensis*	"
Yellow-green matchweed	*Gutierrezia sarothrae*	Surrounding Area
Lycium	*Lycium cooperi*	"
Beavertail cactus	*Opuntia basilaris*	"
Burrobush	*Ambrosia dumosa*	"
Fiddleneck	*Amsinckia tessellata*	"
Filaree	*Erodium cicutarium*	"
Gilia	*Gilia sp.*	"

Note: The above list is not intended to be a comprehensive list of every plant which may occur on the site or in the zone of influence.

Table 2 - Wildlife observed on the site during the field investigations.

Common Name	Scientific Name	Location
Common raven	*Corvus corax*	On-site and in the surrounding area.
California ground squirrel	*Spermophilus beecheyi*	"
Song sparrow	*Melospiza melodia*	"
Horned lark	*Eremophila alpestris*	"
House sparrow	*Passer domesticus*	"
Turkey Vulture	*Cathartes aura*	"
House finch	*Carpodacus mexicanus*	"
Northern mockingbird	*Mimus polyglottus*	"
Mourning dove	*Zenaida macroura*	"
Say's Phoebe	*Sayornis saya*	"
Gambel's quail	*Callipepla californicus*	"
Red-tailed Hawk	*Buteo jamaicensis*	"
Western whiptail lizard	*Cnemidophorus tigris*	"
Side-blotched lizard	*Uta stansburiana*	"
Desert spiny lizard	*Sceloporus magister*	"
Antelope ground squirrel	*Ammospermophilus leucurus*	"
Desert cottontail	*Sylvilagus auduboni*	"
Jackrabbit	*Lepus Californicus*	"
Coyotes	*Canis latrans*	"

Note: The above Table is not a comprehensive list of every animal species which may occur in the area, but is a list of those common species which were identified on the site or which have been observed in the region by biologists from RCA Associates, Inc.

REGULATORY CONTEXT

The following provides a summary of federal and state regulatory jurisdiction over biological and wetland resources. Although most of these regulations do not directly apply to the site, given the general lack of sensitive resource, they provide important background information.

Federal Endangered Species Act

The USFWS has jurisdiction over federally listed threatened and endangered plant and animal species. The federal Endangered Species Act (ESA) and its implementing regulations prohibit the take of any fish or wildlife species that is federally listed as threatened or endangered without prior approval pursuant to either Section 7 or Section 10 of the ESA. ESA defines "take" as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Federal regulation 50CFR17.3 defines the term "harass" as an intentional or negligent act that creates the likelihood of injuring wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns such as breeding, feeding, or sheltering (50CFR17.3). Furthermore, federal regulation 50CFR17.3 defines "harm" as an act that either kills or injures a listed species. By definition, "harm" includes habitat modification or degradation that actually kills or injures a listed species by significantly impairing essential behavior patterns such as breeding, spawning, rearing, migrating, feeding, or sheltering (50CFR217.12).

Section10(a) of the ESA establishes a process for obtaining an incidental take permit that authorizes nonfederal entities to incidentally take federally listed wildlife or fish. Incidental take is defined by ESA as take that is "incidental to, and not the purpose of, the carrying out of another wise lawful activity." Preparation of a habitat conservation plan, generally referred to as an HCP, is required for all Section 10(a) permit applications. The USFWS and National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service) have joint authority under the ESA for administering the incidental take program. NOAA Fisheries Service has jurisdiction over anadromous fish species and USFWS has jurisdiction over all other fish and wildlife species.

Section 7 of the ESA requires all federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any species listed under the ESA,

or result in the destruction or adverse modification of its habitat. Federal agencies are also required to minimize impacts to all listed species resulting from their actions, including issuance or permits or funding. Section 7 requires consideration of the indirect effects of a project, effects on federally listed plants, and effects on critical habitat (ESA requires that the USFWS identify critical habitat to the maximum extent that it is prudent and determinable when a species is listed as threatened or endangered). This consultation results in a Biological Opinion prepared by the USFWS stating whether implementation of the HCP will result in jeopardy to any HCP Covered Species or will adversely modify critical habitat and the measures necessary to avoid or minimize effects to listed species.

Although federally listed animals are legally protected from harm no matter where they occur, the Section 9 of the ESA provides protection for endangered plants by prohibiting the malicious destruction on federal land and other "take" that violates State law. Protection for plants not living on federal lands is provided by the California Endangered Species Act.

California Endangered Species Act

CDFW has jurisdiction over species listed as threatened or endangered under Section 2080 of the California Fish and Wildlife Code. Section 2080 prohibits the take of a species listed by CDFW as threatened or endangered. The state definition of take is similar to the federal definition, except that Section 2080 does not prohibit indirect harm to listed species by way of habitat modification. To qualify as take under the state ESA, an action must have direct, demonstrable detrimental effect on individuals of the species. Impacts on habitat that may ultimately result in effects on individuals are not considered take under the state ESA but can be considered take under the federal ESA.

Proponents of a project affecting a state-listed species must consult with CDFW and enter into a management agreement and take permit under Section 2081. The state ESA consultation process is similar to the federal process. California ESA does not require preparation of a state biological assessment; the federal biological assessment and the CEQA analysis or any other relevant information can provide the basis for consultation. California ESA requires that CDFW coordinate consultation for joint federally listed and state-listed species to the extent possible; generally, a state opinion for the listed species is brief and references provisions under the federal opinion.

California Fish and Wildlife Code, Section 3503.5

Section 3503 of the Fish and Game Code makes it unlawful to take, possess, or needlessly destroy the nests or eggs of any bird. Section 3503.5 prohibits the take, possession, or destruction of any birds of prey or their nests or eggs. Section 4150 provides protection for non-game mammals such as bats. In each case, the California Department of Fish and Wildlife (CDFW) may issue permits authorizing limited take of otherwise protected species.

Migratory Bird Treaty Act

This act (16 USC 703) authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. It establishes seasons and bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs (50 CFR 21, 50 CFR 10). Most actions that result in direct mortality or in the permanent or temporary possession of a protected species, or any associated body parts, feathers, eggs or nests constitute violations of the MBTA.

The MBTA is the primary federal regulation that has driven development of the bird protection guidelines and Avian Protection Plans are now routinely utilized by the electric utility industry to reduce risks of electrocution and collision for migratory birds (e.g., see Avian Powerline Interaction Committee [APLIC] 1994, 2006; and APLIC and USFWS 2005). More recently, this has translated to development of the broader-based guidelines and Avian Protection Plans designed to guide development of utility scale wind-energy and solar-energy projects (e.g., California Energy Commission [CEC] and California Department of Fish and Game [CDFG] 2007; Kunz et al. 2007; USFWS 2008, 2010a, 2011a, 2011b). Importantly, the MBTA provides no mechanism for authorizing incidental take of protected species due to interaction with developments such as energy production facilities or infrastructure. The USFWS law enforcement division routinely applies prosecutorial discretion, however, and does not enforce bird-mortality violations under the MBTA in circumstances where utility or energy companies proactively implement corrective actions and conservation measures designed to minimize the potential for mortality. The USFWS always reserves the option of seeking prosecution when deemed necessary, but actively engages companies to reduce incidental take of protected species and thereby eliminate the need for prosecutorial action.

Bald and Golden Eagle Protection Act

With few exceptions, this act (16 USC 668–668d) prohibits take of bald eagles (Haliaeetus leucocephalus) and golden eagles (Aquila chrysaetos). Unlike the MBTA, which defines "take" to mean only direct killing or taking of birds or their body parts, eggs, and nests, BGEPA defines take in a manner similar to FESA as including "pursuing, shooting, shooting at, poisoning, wounding, killing, capturing, trapping, collecting, molesting, and disturbing," with "disturb" further defined (50 CFR 22.3) as ''to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.'' Therefore, the requirements for guarding against impacts to eagles generally are far more stringent than those required by the MBTA alone.

Another substantial difference between the MBTA and BGEPA is that, similar to FESA, BGEPA now provides a mechanism for authorizing programmatic permits to allow limited, incidental take of eagles in conjunction with otherwise lawful activities such as energy production (USFWS 2009a). The requirements for authorizing such permits include compatibility with the standard that actions must be consistent with the goal of maintaining stable or increasing breeding populations. New federal guidelines for how to achieve this objective and other national conservation priorities (USFWS 2009b, 2010b, 2011a, 2011b), especially for golden eagles which have shown evidence of decline in parts of their range, are still being actively debated.